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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,322	07/17/2002	Lutz Axel May	6770-6	3581

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EXAMINER

MILLER, TAKISHA S

ART UNIT PAPER NUMBER

2855

DATE MAILED: 12/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/049,322

Applicant(s)

MAY, LUTZ AXEL

Examiner

Takisha Miller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-30 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3, 5-12, 15-23 and 25-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Jones (6,513,395).

a. With respect to claims 1,6 and 22, Jones teaches a transducer element for a torque or force transducer comprising a member (2) having a structure (6,10,12) which extends generally radially of an axis to transmit a stress between a radially inner region (6) of the structure (6,10,12) and a radially outer region (12), and at least one region (10) of permanent magnetization disposed between said inner (6) and outer (12) regions to be responsive to the transmitted stress and emanate a stress-dependent magnetic field (Col. 3, lines 43-50)).

b. With respect to claim 2, Jones teaches a transducer element in which there are two magnetized regions (26,28), a radially inner region (6) and a radially outer region (12) between which a stress-dependent field is established (Col.4, lines 14-17)(Fig.3).

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c. With respect to claim 3, Jones teaches a transducer element in which the or each region (26,28) of permanent magnetization is arcuate (having a curved form) with respect to said axis (Fig.3).

d. With respect to claims 5 and 23, Jones teaches a transducer element in which the or each region (26,28) of permanent magnetization is annular (shaped like a ring) and encircle said axis (Fig. 3).

e. With respect to claims 7 and 18, Jones teaches a transducer element in which said member (2) has a generally disc structure (Fig.4; Col. 8, lines 14-17).

f. With respect to claims 8,10 and 12, Jones teaches a transducer element in which there are two regions (26,28) of permanent magnetization, each being magnetized in an axial direction and the polarities of magnetization of the two regions (26,28) being opposite (Col. 4, lines 31-33).

g. With respect to claims 9 and 11, Jones teaches a transducer element comprising a means to close a flux path between the two regions (Col. 6, line 64 – Col. 7, line 6).

h. With respect to claims 15-17, Jones teaches a transducer system comprising a transducer element which is subjected to stress generated between said radially inner and outer regions of said structure through said at least one magnetized region (26,28) to emanate a torque-dependent magnetic field, and a sensor system comprising one or more magnetic field sensors (16) to provide a signal representing the stress generated between one and the other of said radially inner and outer regions (Col.6, lines 55-60).

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i. With respect to claim 19, Jones teaches a transducer system in which said one or more magnetic field sensors (6) is disposed and oriented to detect a circumferential magnetic field component and provide a signal representing the same (Col. 6, lines 55-60).

j. With respect to claim 20, Jones teaches a transducer system in which said one or more magnetic field sensors (20) is disposed and oriented to detect a radial magnetic field component and provide a signal representing the same (Col. 7, lines 20-35).

k. With respect to claim 21, Jones teaches a transducer system further comprising signal processing circuitry responsive to said signals representing the circumferential magnetic component and the radial magnetic field, respectively (Col. 7, lines 9-14).

l. With respect to claim 25, Jones teaches a transducer element in which said first and second regions are both circumferentially magnetized to develop a radial magnetic field component at said surface as a function of torque (Col. 4, lines 17-21).

m. With respect to claim 26, Jones teaches a torque or force transducer (2) assembly comprising first (6) and second (12) members coaxially disposed, said first (6) member being of greater diameter than said second member (12), a disc-shaped member (10) extending generally radially of said axis and connecting said first member (6) to said second member (12) for transmitting force from one member to the other. The disc-shaped member (10) comprising two magnetized annular regions (26,28) that are at least arcuate or annular or are part annular (Figs. 1,3).

n. With respect to claim 27, Jones teaches a transducer assembly which is adapted to transmit torque from one of said members to the other (Abstract, lines 10-14).

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o. With respect to claim 28, Jones teaches a transducer assembly in which said magnetized regions (26,28) are circumferentially magnetized with opposite polarities (Col. 4, lines 17-21).

p. With respect to claims 29 and 30, Jones teaches Jones teaches a transducer assembly comprising first (6) and second (12) members mounted to cause flexing of a disc-shaped member (10) in response to a relative displacement of said first and second members (Col. 3, lines 18-28).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 13,14 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones (6,513,395) in view of Grancoin (4,150,653).

a. With respect to claims 13 and 14, Jones teaches a transducer element comprising a single region of magnetization (23) but lacks teaching the single region of magnetization extending obliquely to an axis. Grancoin teaches a single region of magnetization (41) extending obliquely to an axis (Fig. 22). It would have been obvious to one of ordinary skill in the art to modify Jones to include a single region of magnetization extending obliquely to an axis as taught by Grancoin in order to create a substantially sinusoidal variation of the field on the element (see Grancoin; Col. 9, lines 30-33).

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- b. With respect to claim 24, Jones teaches a transducer element comprising first and second regions but lacks explicitly teaching both regions are longitudinally magnetized. Grancoin teaches a magnetized region that is longitudinally magnetized (Col. 6, line 61 – Col. 7, line 6)(Figs. 11,12). It would have been obvious to one of ordinary skill in the art to modify Jones to include longitudinally magnetized regions as taught by Grancoin in order to include a substantially sinusoidal circular distribution (see Grancoin; Col. 7, lines 3-4).
6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jones (6,513,395) in view of May (2003/0150282). Jones teaches a transducer element having a region of permanent magnetization but lacks teaching the region of permanent magnetization is an interrupted annulus. May teaches the region of permanent magnetization (30) is an interrupted annulus (Fig.7). It would have been obvious to one of ordinary skill in the art to modify Jones to includes an interrupted annulus as taught by May in order to make use of very powerful permanent magnets (see May; ¶ 0040, lines 25-30).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. (4,803,885) and (5,520,059) teach torque-measuring devices.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Miller whose telephone number is (703) 305-4969.

The examiner can normally be reached on Monday - Friday (8:00 am - 4:30 pm).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (703) 305-4816. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.



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